

2.—*New Arachnida collected by Mr. S. C. Cronwright Schreiner at Hanover, Cape Colony. With Plate I.—By W. F. PURCELL, Ph.D., First Assistant.*

THE altitude of the town of Hanover is 4,686 ft. above sea-level, and the district of that name forms part of the high-lying arid karroo-plateau which occupies the interior of Cape Colony.

During the last four months of 1901 and the beginning of 1902 Mr. S. C. Cronwright Schreiner set himself to collect the Arachnid fauna of this district, and with very remarkable success got together several thousands of specimens, which were well preserved in spirits and given to the South African Museum. Although the great bulk of this collection was made by Mr. Schreiner himself in the immediate neighbourhood of the town of Hanover, a considerable number of specimens were obtained on farms in the district by the Dutch farmers and their children, whose services were enlisted, the farms mentioned in this paper in this connection being Vlagkop, Palmietfontein, and Poortjesfontein, all 5-6 miles north of Hanover; Eierfontein, about 8-9 miles west of Hanover; and Krapfontein, about 15 miles west of Hanover.

Mr. Schreiner was particularly successful in collecting a large number of specimens of trap-door spiders, which, although numerous, require considerable perseverance as well as experience to detect in their well-concealed burrows. Three large trap-door spiders (a *Goryrella* and 2 species of *Stasimopus*) of the family *Ctenizidæ* were found to be common in the district, but 2 smaller species of the same family and 1 of the family *Migidæ* were also obtained, all these spiders being new. Mr. Schreiner also found numbers of a trap-door *Lycosa** and of a most interesting new Eresid, which, although not belonging to a trap-door-building family, constructs the remarkable nest described and figured further on.

* No doubt *L. domicola*, Sim., but I cannot discover the original description of this species, which is mentioned in Simon, *Araign.*, 2^e Éd., t. 2, pp. 329 and 341.

In the present paper 2 new *Solifugæ* and 13 new spiders are described, these being, however, only a portion of the new species contained in Mr. Schreiner's collection.

ORDER SOLIFUGÆ.

DÆSIA SCHREINERI, n. sp.

(Pl. I., fig. 11.)

Types.—1 nearly mature ♀ and 1 ad. ♂ (No. 8783) from Hanover, 1 ad. ♀ (No. 9775) from Eierfontein, 1 ad. ♂ (No. 9765) and 1 nearly mature ♀ (No. 9783) from Palmietfontein, and 1 ad. ♂ (No. 9776) from Vlagkop (ad. ♀ in December, ♂ ♂ in October and December).

♀ ♀. *Head-plate* resembling that of *leipoldti*, Pure., in colour, but with the long setæ slightly stronger and more conspicuous, especially on the anterior side of the eye-tubercle, which bears, in addition to a number of fine setæ, 3 pairs of long conspicuous spines (forming part of the semicircular row round each eye), the upper pair being setiform and the distance between the middle (stoutest) pair at most only slightly exceeding half the distance between the eyes.

Chelicera pale yellowish or pale ochraceous, the dorsal infuscated stripes not expanded nor united distally, the inner stripe less distinct than the outer one, the dorsal surface marmorate on each side of the outer stripe; the lateral surface not marmorate, with a feeble infuscate stripe at base. Jaws normal, the dentition as in *kolbei*, Pure., except that there is always only one intermediate tooth above; the distal upper tooth smaller than the second.

Abdomen.—Tergites with a narrow median infuscate band and on each side a broad infuscate lateral patch. *Soft skin* on each side with a long transverse row of 4–7 short, strongly curved, claw-like spines near the anterior margin in segments I and II; with a group of 1–4 similar spines (becoming longer posteriorly) in 1–2 rows in the upper part in segments III–VI or III–V and with a pair of long subsetiform spines on each side in segment IX (a similar inferior spine sometimes present in segment VIII and a shorter superior one sometimes in segment VII); segment X without spines; also an inferior transverse row of 4–6 small curved spines near hind margin in segment III and adjoining these in the lower anterior part of the sides in segment IV is a transverse row of 4–8 parallel longitudinal ridges. All the curved spines on segments I–VI are curved backwards, and

are considerably or only slightly darker than the other hairs and setæ.* Their number appears to be rather variable.

Pedipalps infuscated in the same manner as in *leipoldti*, excepting the femur, which has a dorsal longitudinal stripe as well as the under side and the distal portion of the segment infuscated, the sides also faintly infuscated in the middle portion. Shape of metatarsus and tarsus as in *leipoldti*, but the spine-armature of the metatarsus, tibia and femur very much stronger and similar to that in *kolbei*, Purc. (Ann. S. A. Mus., v. 1, p. 391).

Legs with the proximal and distal segments pale yellow; the femora infuscated, especially in fourth leg, on the anterior surface, the distal part of the posterior surface and to a lesser extent above; the tibiæ infuscated, excepting below; metatarsus I infuscated (excepting below), II and III slightly or scarcely at all infuscated at the base on each side, IV infuscated in the basal half on each side. Metatarsi II and III spined as in *leipoldti*.

♂ ♂. *Head-plate* with the long setæ very strong and stout; the spiniform setæ and spines on the upper and anterior surfaces of the ocular tubercle very strong.

Chelicera bristling with long, strong, spiniform setæ above and with short ones on the outer side. *Upper finger* (pl. I., fig. 11) very straight distally, becoming gradually pointed towards the apex; terminal fang compressed laterally, concave on the inner side and only slightly curving outwards; the dorsal edge (seen from the side) slightly convex in the basal part, but lightly inclined and quite straight in the distal half; the ventral edge evenly concave, excepting at the terminal fang, where it is straight; distal tooth saw-edge-like, very low and remote from the apex, second and fourth tooth strong, long and directed forwards, third (intermediate) tooth small, the fourth tooth followed by an outer and an inner row of 3-4 teeth each. *Lower finger* normal, with 2 long hooked teeth and a small intermediate one. *Flagellum* a thin-walled, transparent, colourless, laterally compressed, elongate pear-shaped, hollow capsule, rounded in front and drawn out posteriorly into a grooved blunt point; the opening occupies the whole lower half of the inner surface; the outer side with a brownish rib along the middle and rotatably attached at about $\frac{1}{4}$ of its length from the anterior end to the inner surface of the upper finger on a level with the fourth

* The inferior row of spines and ridges in the third and fourth segments were first noticed by Pocock in *D. bernardi*, Poc., from Hex River Valley, Cape Colony, but they are also present in *D. leipoldti*, Purc.

tooth. Rotated forwards, the flagellum reaches to the apex of the upper finger.

Abdomen.—The spines corresponding to those on the soft skin of the sides in the ♀ thinner, longer, and much less conspicuous than in the ♀, those of the more posterior segments scarcely, if at all, distinguishable from the bristles, but the inferior spines and ridges of segments III and IV distinct. Ventral side of segment II with a large patch of turbinate and clavate, ochraceous to brown, fleshy hair-structures (about 15–20 large and from 40 to over 100 smaller ones).

Pedipalps longer and stouter than in the ♀, the spine-armature much the same, except that in the metatarsus the 2 distal setæ of the inner row are replaced by 2 strong, much shorter spines, each tipped by a fine bristle, which is apparently sometimes absent (broken off?), and in the femur there is a very strong spiniform seta, equalling the inferior setæ in stoutness, on the inner surface distally (represented in the ♀ by a much finer seta).

Measurements.—Total length of ad. ♀ $20\frac{1}{4}$ mm., of ♂ ♂ $19\frac{1}{2}$ –23, of pedipalp in ♀ 14, in largest ♂ 20, of head-plate ♀ 3·2, ♂ 4.

Closely allied to *D. leipoldti*, Purc. (Ann. S. A. Mus., v. 1, p. 388), but differing principally in being much more strongly spined on the pedipalps. The abdomen is pale yellowish in the ♂, but may be reddish in the immature ♀. Found under stones in the day-time.

BLOSSIA ECHINATA, n. sp.

(Pl. I., fig. 10.)

Specimens.—1 ♂ (No. 9777) and 1 ad. ♀ (No. 9769) from Hanover (♂ in January, ♀ in December).

♂ (*Type*). *Colour* pale yellow; head-plate with faint infusate stains (except in the middle), the anterior margin narrowly blackened; the 3 distal segments of pedipalps (except below) and the distal part of the femur fuscous brown; legs III and IV with the femora yellowish at base, fuscous brown distally, the tibiæ fuscous brown on the sides; metatarsus of leg IV and the base of that of leg III fuscous brown on the sides.

Head-plate with long and medium-sized, strong, notched spines scattered over its surface, some of those at the sides and in front being almost as long as those at the hind margin.

Chelicere bristling with numerous, long, stout spines; the distal dorsal bristle long and slender, lightly curved, not reaching to apex of jaw, its surface minutely roughened in the distal half. *Dorsal*

finger (pl. I., fig. 10) almost straight, furnished with a small sharp tooth before the middle on the dorsal edge; the ventral edge almost straight, the teeth of the distal series pointed, composed of 2 large distal ones remote from the apex, a smaller third tooth and a large fourth tooth, the latter slightly smaller than those of the distal pair and followed by a smaller tooth and others of the double series; terminal fang long, curving slightly outwards and downwards towards the apex, its lower edge with a minute tubercle or slight convex dilatation before the large distal tooth. *Ventral finger* high, with 3 pointed teeth in the middle, the intermediate one small (obsolete on one side); in front of these is a rounded upright keel on the inner edge and a smaller, brown, tubercular tooth or keel on the outer edge of the upper side. *Flagellum* long, very like that of *karrooica*, Purc., the lightly inflated basal part elongate and strongly curved, laterally compressed, and open along the ventral side, the anterior end attached to the inner side of the finger above the third (intermediate) tooth; the distal part forming a linear, laterally compressed rod, slightly longer than the inflated basal part and strongly curving outwards, but appearing almost straight when seen from the side, the apex suddenly pointed and upturned.

Abdomen.—The tergites in the anterior and middle portion of the abdomen (like those of the thorax) with a number of strong notched spines, replaced by slenderer setæ in the posterior segments; second abdominal segment below with 2 clusters of 3 fleshy, pale yellowish hairs each, meeting distally in the median plane, the hairs long, filiform and curved.

Pedipalps with the cylindrical bristles on the dorsal surface of the tibia as long as those on the metatarsus, as in *karrooica*; the metatarsus with 3 long, strong, very distinct, ventral spines; the tibia with 4 (sometimes 3?) long spines below.

Total length 10 mm.

♀. Only one of the 6 female *Blossia* captured appears to be the ♀ of this species. The colour of this specimen is much as in the ♂, except that the limbs are still more faintly infuscated, while the thoracic and abdominal tergites are distinctly, although lightly, tinged with fuscous brown, especially towards the sides. The chelicerae and head-plate are strongly spined, as in the ♂ (except that the spines are shorter and relatively stouter), and furnished in addition with numerous very short and stout spinules, corresponding in part to the short, cylindrical setæ of the other species, some of which setæ are also present here. First 6 abdominal tergites with a row of moderately long spines along hind margin, besides some very short

and stout spinules scattered over the surface, the posterior segments with cylindrical setæ instead of spines. Spines on the metatarsus as in the ♂ but shorter, the tibiæ with a row of 4 spines below, besides a longer, slenderer, proximal one. Dentition of chelicerae normal, with one intermediate tooth above. Second abdominal segment injured below.

Total length $13\frac{1}{4}$ mm.

This species is closely allied to *B. karrooica*, Purc. (Ann. S. A. Mus., v. 2, p. 216), and *B. setifera*, Poc. (Ann. Mag. N. H., ser. 7, v. 5, p. 301). It is found under stones.

ORDER ARANEÆ.

FAM. MIGIDÆ.

MOGGRIDGEA SETICOXA, n. sp.

Types.—3 ♀ ♀ (measuring from $10-12\frac{1}{2}$ mm. in length) from Hanover (No. 9459) and Eierfontein (No. 10053) (September and January).

♀ ♀. *Colour*.—Carapace, chelicerae and limbs pale yellowish olivaceous, the yellow predominating in some parts, the green in others, the lateral edges and median longitudinal line of the cephalic portion darkened; abdomen pale yellowish, the upper side more or less dark purplish; sternum, coxæ, and often parts of the legs, pale yellowish; spines on the legs black.

Carapace wide, its length (measured laterally to the ocular area) a little less than that of the tibia, metatarsus and tarsus of first leg, but considerably less than that of the tibia and metatarsus of fourth leg in largest ♀. *Ocular area* almost $2\frac{1}{2}$ times as wide as long, its width a little less than the length of the metatarsus of first leg; the anterior row of eyes with its hind margin only very slightly procurved (when seen from above), the lateral eyes much larger, their diameter $2-2\frac{1}{2}$ times that of the small median eyes; posterior row strongly recurved, the eyes smaller than the anterior medians, equal to each other or the laterals slightly larger, the medians distant about their own diameter or slightly less from the laterals, which again are separated from the anterior laterals by scarcely more than a long diameter of the latter.

Legs.—*Tarsi* I and II with minute setæ below in rows; III densely studded below and at the sides with stout, black, setiform spines, especially distally; IV with black setæ, those on the under side mostly stout or even spiniform. *Metatarsus* I with 6-9 spines on each side; II

with 5-8 spines on each side; III and IV with some long distal spines or spiniform setæ; IV also with an infero-posterior apical tuft of 3-4 spiniform setæ, exactly resembling those of a *Stasimopus*. *Tibia* I almost or quite twice as long above as wide, with 5-6 inner and 6-8 outer spines; II with 4-6 spines on each edge; III with some curved, apical, setiform spines above; IV with some long distal spines or spiniform setæ below. *Patella* III with an anterior upper row of shorter, stout, curved (at apex of segment almost setiform) spines, and a posterior upper row of longer, stout, spiniform setæ; IV with a broad, anterior, upper band of shorter setiform spines, and a posterior upper row of longer, stout, spiniform setæ. *Coxæ* muticous, with stoutish setæ below; III with a posterior basal group of 9-10 more spiniform setæ below.

Labium with the teeth longish and on the anterior half only.

Coxæ of pedipalps with the basal teeth long, the toothed area in the distal half of the coxa very narrow and composed of only 1-2 rows of teeth.

Measurements of a ♀.—Total length $11\frac{1}{2}$ mm.; length of carapace 4.1, width $3\frac{2}{3}$.

The specimens were found under stones.

FAM. CTENIZIDÆ.

STASIMOPUS SCHREINERI, n. sp.

Types.—One large ♀ (36 mm. in length; November), and 4 smaller ♀ ♀ (21-28 mm. in length; Nos. 9513, 9516, 9551, 9558) from Hanover and Poortjesfontein (October, November), and 1 ♂ (No. 9159) from Hanover (September). ♂ found under a stone, ♀ ♀ in trap-door burrows. Five younger specimens, the smallest measuring $9\frac{3}{4}$ mm. in length, were also obtained, but are not comprehended in the following description.

Closely allied to *S. leipoldti*, Pure. (Trans. S. A. Phil. Soc., v. 11, p. 348).

♀ ♀. *Colour* much darker than in *leipoldti*, the abdomen more or less blackish purple above, especially posteriorly.

Carapace almost as long as the patella, tibia and metatarsus of first leg, and as the tibia, metatarsus and tarsus of fourth leg in the large ♀, but shorter in the smaller specimens. *Ocular area* wide, its width behind equalling the metatarsus together with $\frac{1}{2}$ - $\frac{3}{4}$ of the tarsus of first leg, but slightly less than the fourth metatarsus. *Eyes* rather far apart, disposed much as in *leipoldti*; the anterior laterals large and oval, the posterior medians small, strongly oval, subequal

to or even slightly smaller than the posterior laterals, and distant from them by about an eye's diameter or less; the area formed by the posterior median and anterior lateral eyes distinctly, sometimes only very slightly, narrower behind than in front; distance between the posterior and anterior lateral eyes considerably exceeding the long diameter of the latter; the distance between the former pair of eyes also distinctly and generally considerably exceeding the width of the anterior row of eyes.

Pedipalps with a band of 11–18 short, close-set spines along the whole length of the inner side of the tarsus, and an internal row of 2–4 (rarely only one) stout spines on the tibia; tarsus with a tiny basal patch of 10–20 minute spinules above, the tibia with a tiny apical group of 2–8 such spinules above.

Legs.—Length of tibia of *first leg* at least equal to that of the metatarsus, and very slightly (large ♀) or more considerably (smaller ♀ ♀) exceeding the width of the anterior row of eyes, but always decidedly less than the width of the posterior row; tibia with an internal band of 7–20 spines, occupying the distal third at least, the upper side with a tiny apical patch of minute spinules; metatarsus with a tiny basal patch of spinules above, occupying $\frac{1}{10}$ – $\frac{1}{8}$ of the length. *Second leg* with a broad band of spines on outer surface of tarsus and 4–12 spines on inner surface of tibia. *Third leg* with 0–3 posterior and a number of distal anterior spines on the tarsus, 16–23 spines in the anterior and posterior bands on the metatarsus, a number of distal spines on each side of the tibia, and a band of 11 or more stout spines on the anterior side of the patella; the latter also with a number of slenderer distal spines and spinules above (quite absent in *leipoldti*); metatarsus with an apical patch of spines or setæ below. *Fourth leg* with a number of anterior spines on the 3 distal segments; the anterior patch of red spinules on the patella very large, extending over more than $\frac{1}{2}$ and up to $\frac{3}{4}$ of the length of the anterior side; infero-posterior apical tuft of metatarsus composed of 4–9 similar spiniform setæ arranged in a transverse row, as in *leipoldti*.

Labium with 4–8 apical teeth.

Measurements of large ♀.—Total length 36; length of carapace 11·9, width $10\frac{1}{3}$; length of metatarsus of first leg 4; width of ocular area 5.

♂. *Colour*.—Carapace dark brown, the cephalic region and the granules black; chelicerae brown; abdomen black, only the genital segment below, the lung-books and the spinners pale yellowish; pedipalps and 2 anterior pairs of legs black, but their tarsi, the distal part

of the tibia of the pedipalps and the greater part of the metatarsi of the legs pale ochraceous; the 2 posterior pairs of legs pale yellowish, more or less infuscated in parts, especially on the femur of third leg; sternum pale yellowish behind, lightly infuscated in front; the 2 posterior pairs of coxæ and the anterior lower edges of the 2 anterior pairs pale yellowish; coxæ of pedipalps dark brown.

Carapace covered with confluent granules and ridges on the thoracic portion; the cephalic portion not punctate, with some fine granules and ridges in the posterior part only, and densely, finely and transversely striated and wrinkled in the anterior part at the sides, the upper part with 3 strong keels, of which the lateral ones are abbreviated behind, while the median one becomes very fine and is continued to the fovea. Carapace as long as the metatarsus and about $\frac{1}{5}$ of the tarsus of first leg, but a little shorter than the metatarsus of fourth leg. Eyes much as in the ♀, but the anterior laterals hardly larger than the medians.

Pedipalps not spined, remarkably long and thin, reaching beyond the apex of the metatarsus of first leg, when stretched out in front; all the segments, including the femur, almost straight; the tibia swollen, elongate-clavate, as long as the fourth metatarsus and very distinctly longer than the carapace; patella very long and slender, only a little shorter than the tibia and at least equal to the tibia of first leg. Process of palpal organ long and very slender, much longer than the bulb, strongly bent at the thickened base and curved again distally.

Legs.—*First leg* very long and slender, the tarsus swollen and scopulate below, with 1 internal and 0–1 external spine; metatarsus quite straight, thickly spined on both sides below but not along the median line; tibia a little longer than the metatarsus, thickly spined below; patella with a few, distal, subsetiform spines below. *Second leg* spined like the first, the tarsus like that of the first but with 1–2 internal spines and 1 external one. *Third leg* with the tarsus cylindrical, scopulate below, and with 3 anterior and 2–3 posterior spines; metatarsus slightly curved, spined below, with a few spines also along the anterior and posterior sides; tibia spined at the apex on each side and with a distal patch of spinules above; patella with an anterior row and a distal patch of spinules above. *Fourth leg* with the tarsus cylindrical, without trace of scopula, and provided with 1–2 internal and 11–13 external spines; metatarsus slightly curved, with a few spines below and externally; tibia with a pair of minute, distal, external spines; patella with a large patch of minute spines extending over about $\frac{2}{3}$ of the length of the anterior side; the posterior

apical fringe of setæ on the metatarsus present but less distinctly differentiated than in the ♀.

Measurements.—Total length 12; length of carapace 4.9; length of pedipalp (including coxa) $18\frac{1}{2}$; length of first leg 21.

Nests.—The nests with the surrounding earth of 3 of the younger specimens and the tube and lid of one of the typical females were sent to me by Mr. Schreiner. Their dimensions in mm. are as follows:—

	No. 9525.	No. 9520.	No. 9524.	No. 9558.
Width of lid taken parallel to hinge	$7\frac{2}{3}$	15	16	20
Width of lid taken at right angles to hinge	8	$14\frac{1}{2}$	$14\frac{2}{3}$	$19\frac{1}{2}$
Width of hole at 10 mm. from edge	$6\frac{1}{2}$	11	$12\frac{1}{2}$?
Width of hinge	4	9	$9\frac{1}{2}$	$11\frac{1}{2}$
Average thickness of lid about	2	$2\frac{1}{2}$	$3\frac{1}{2}$	$2\frac{1}{2}$
Length of occupant	$13\frac{3}{4}$	$19\frac{1}{2}$?	28
Width of its carapace	$3\frac{1}{2}$	$5\frac{3}{4}$	$6\frac{1}{5}$	$8\frac{1}{4}$

The hole in the 3 smaller specimens is cylindrical and almost but not quite perpendicular, inclining slightly towards the hinge side as it descends, so that the deeper part comes to lie below the hinge (*cf.* pl. I., fig. 1). It is well lined with silk, and widens slightly but very distinctly all round at the opening, commencing at about 4–5 mm. from the edge.

The door is thick and nearly circular, the circumference being, however, slightly straightened at the hinge, excepting in the smallest specimen. The upper surface is irregular, concave or nearly flat and coated with mud, thus resembling the surrounding earth. The under side is flat or more or less lightly convex; it is strongly bevelled at the edge, the bevelled surface passing over quite gradually into the flattened lower surface (the lower edge somewhat angular in places in the smallest specimen only). There is no circle of conspicuous large holes on the under surface, only very few, if any, of the larger holes being present.

STASIMOPUS UNISPINOSUS, n. sp.

(Pl. I., figs. 1–2.)

Types.—1 large ♀ (38 mm. in length) and 5 smaller ones (24–30 mm. in length) from Hanover and the neighbouring farm

Poortjesfontein in October (Nos. 9426, 9523, 9579). Three younger specimens, the smallest $11\frac{3}{4}$ mm. in length, and a large number of very young individuals from a nest were also sent but are not comprehended in the following description.

♀ ♀. *Colour* as in *leipoldti*, but the upper side of the abdomen extensively blackish brown posteriorly and furnished anteriorly with a blackish brown median spot, generally followed by another smaller spot.

Carapace as long as the patella, tibia, and $\frac{2}{3}$ – $\frac{5}{6}$ of the metatarsus of first leg, and equal to the tibia, metatarsus, and $\frac{2}{3}$ – $\frac{2}{3}$ of the tarsus of fourth leg. *Eyes* compact, the width of the ocular area behind $\frac{3}{4}$ to nearly equal to the length of the metatarsus of first leg and $\frac{3}{5}$ – $\frac{3}{4}$ that of fourth leg. Anterior row of eyes with the hind margin (seen from above) straight or slightly procurved, the median eyes nearer to the laterals than to one another, the laterals much larger, strongly transversely oval. Posterior row straight or nearly so, a line joining the anterior margins sometimes slightly recurved or even slightly procurved; the median eyes oval or subcircular, their outer edges very distinctly nearer together than the outer edges of the anterior lateral eyes; posterior lateral eyes oval, subequal to the median eyes and less than an eye's diameter from them, their distance from the anterior laterals generally much less than (rarely equalling) the long diameter of the latter; a line parallel to the long axis of the body and touching the outer edges of the anterior laterals would cut or touch the posterior laterals but rarely pass on their median side.

Pedipalps and *legs* more numerous spined than in *leipoldti*. Tarsus of *pedipalps* with 6–9 shortish spines on the inner side; the tibia with 1, rarely 2, distal internal spines in addition to the basal spine; the upper surface of the tarsus with a basal patch of 10–20 minute spinules, the tibia with a similar apical patch of 6–15 spinules. *First leg* with the tibia slightly shorter than the metatarsus, $1\frac{1}{3}$ – $1\frac{1}{2}$ times as long as the width of the anterior row of eyes and provided with a band of 11–25 short spines along at least the distal half of the anterior surface; the superior band of spinules on the metatarsus occupying from about $\frac{1}{2}$ to $\frac{2}{3}$ of the length of the segment. *Second leg* with 4–12 short spines on anterior surface of tibia, and with the superior patch of spinules on the metatarsus slightly shorter; otherwise spined like the first leg. *Third leg* with 5–17 posterior spines on the tarsus and 16–32 stout spines in the anterior and posterior bands on the metatarsus; the tibia with a large anterior and posterior distal patch of stout spines; distal superior patch of red spinules on the tibia large,

occupying $\frac{2}{3}$ — $\frac{1}{2}$ of the length of the segment; patella with a superior distal patch of stoutish or slender, sharp spinules, in addition to the short stout spines along the anterior surface; metatarsus with an inferior apical tuft composed of 3–11 irregularly arranged, unequal spines and some spiniform bristles. *Fourth leg* with a number of spines on the anterior surface of the 3 distal segments; the basal patch of red spinules on the patella very large, reaching to the distal fifth or sixth of the segment on the anterior surface; infero-posterior apical tuft on metatarsus formed of a single, long, stout spine, usually flanked by 1–3 slenderer spines or spiniform setæ, the under surface sometimes also with a stout spine remote from the apex.

Labium with 5–8 apical teeth.

Measurements of largest ♀.—Total length 38 mm.; length of carapace $12\frac{1}{4}$, width $10\frac{1}{4}$; length of metatarsus of first leg $4\frac{3}{4}$; width of ocular area $3\frac{2}{3}$.

This species is closely allied to *S. oculatus*, Pocock (P.Z.S., 1897, p. 728), from Bloemfontein.

Nests.—The nests with the surrounding earth of 2 of the younger specimens and of 1 of the typical females and the lid of another of the typical females were sent to me by Mr. Schreiner. Their dimensions in mm. are as follows:—

	No. 9561.	No. 9560.	No. 9523.	No. 9579.
Width of lid taken parallel to hinge	$6\frac{1}{4}$	$10\frac{1}{3}$	$19\frac{1}{2}$	$23\frac{1}{4}$
Width of lid taken at right angles to hinge	$5\frac{3}{4}$	$9\frac{3}{4}$	$17\frac{1}{2}$	$22\frac{1}{3}$
Width of hinge	$2\frac{1}{4}$?	8	11
Width of hole at 10 mm. from edge	5	8	$15\frac{1}{4}$?
Average thickness of lid about	$2\frac{1}{4}$	$3\frac{1}{2}$	$5\frac{3}{4}$	4
Length of occupant	$11\frac{3}{4}$	17	$24\frac{1}{2}$	29
Width of carapace	$2\frac{3}{4}$	$4\frac{1}{4}$	$7\frac{1}{2}$	$8\frac{1}{4}$

These nests closely resemble those of *S. schreineri* described above but there are some differences in the structure of the lids by which they may be easily distinguished.

The lids of *unispinosus* (pl. I., figs. 1–2) are relatively much thicker (*cf.* measurements), the edges less bevelled, the peripheral surface appearing much less wedge-shaped, when seen from the side, and passing over at the more angular lower edge rather suddenly into the flattened under surface. This is particularly marked in the

2 smallest specimens, in which the lids are almost cylindrical and quite cork-like. But the principal feature of these lids is the presence of a number of very conspicuous, large pits, arranged in a circle and situated half-way between the centre and the circumference of the lower surface. These pits may be open, or partly filled up, or spun over with some strands of silk, being, however, still visible as dark spots. Sometimes the portion of the circle nearest the hinge is obliterated.

GORGYRELLA SCHREINERI, n. sp.

(Pl. I., figs 3-4.)

Types.—35 specimens (No. 9518, &c.), mostly adult females from Hanover, and 5 from the neighbouring farms Vlagkop and Poortjesfontein. Adult ♀♀ from September to January. Cocoons in December. Young in January.

♀♀. *Colour* like that of *G. namaquensis*, Purc. (Trans. S.A. Phil. Soc., v. 11, p. 350) or darker; the carapace and limbs pale ochraceous, often faintly infuscated; chelicerae yellowish brown to darker brown; abdomen wholly pale yellowish to dirty ochraceous, the dorsal surface sometimes darkened with purplish brown; sternum and coxæ pale yellow to ochraceous; labium and coxæ of pedipalps slightly darker ochraceous to light brown.

Carapace (measured laterally to the ocular area) as long as the tibia, metatarsus, and $\frac{1}{6}$ – $\frac{1}{3}$ of the tarsus of fourth leg and as the patella, tibia, and $\frac{1}{2}$ – $\frac{2}{3}$ of the metatarsus of first leg. *Ocular area* wider than in *namaquensis*, its width equalling or exceeding the length of the metatarsus of first leg (by about $\frac{1}{4}$ of the tarsus), its length also generally much less than the distance between the lateral eyes. The area formed by the anterior lateral (frontal) and anterior median eyes parallel-sided or wider in front (rarely very slightly wider behind), the median eyes $\frac{2}{3}$ – $1\frac{1}{2}$ times their diameter apart, the frontal eyes subequal to or considerably larger than the medians and $\frac{1}{2}$ –1 diameter apart. Posterior median eyes generally distinctly further from the posterior laterals than from one another (sometimes only as far); the area formed by the 4 median eyes very distinctly wider behind than in front; posterior lateral eyes large, their distance from the anterior margin of carapace less than $\frac{1}{2}$ the width of the ocular area.

Pedipalps and *legs* as in *namaquensis*, except that the tibia of the fourth leg is provided with 3–10 (rarely 0–2) short spinules along the outer surface, at least at the base; the metatarsus of the third leg with 2 (sometimes 3) distal spines (rarely spiniform setæ) below;

the inner distal edge of patella of third leg with 4-9 stout apical spinules; the inferior surface of coxæ of first leg generally entirely without dentiform spinules, sometimes, however, with a few weak and inconspicuous ones confined to a narrow area in the basal half of the posterior margin of the coxa, this area very much less extensive than the large denticulate area on the coxa of second leg. (In *namaquensis* the denticulate area on the first leg is almost or quite as extensive as that on the second leg, and occupies almost half of the inferior surface of the coxa.)

Genital operculum smooth for some distance in front of the hind margin (in one specimen with a transverse groove near hind margin, as in *namaquensis*).

Measurements of largest ♀.—Total length 33 mm.; length of carapace 10, width 9; length of tibia of first leg $4\frac{1}{3}$.

Cocoons.—The cocoons, of which 2 specimens were obtained, consist of a white oval capsule, almost flat on one surface, but strongly convex on the other, and of a tough parchment-like texture. The oval edge of the flattened side is provided all round with a broad free flap. I counted in one uninjured cocoon 89 eggs, measuring on an average 2.4 mm. in diameter (in spirits). The flat side of this cocoon measured 22 mm. by 13 mm., and its thickness was about 9-10 mm. The eggs occupy only slightly over half the inner cavity. The embryos, which were preserved on December 1st, were already considerably advanced.

A ♀ with a brood of young was dug up on January 11th.

Nests.—The nests, with the surrounding earth of 4 of the specimens, were sent to me by Mr. Schreiner, the dimensions being as follows:—

	No. 9509.	No. 9519.	No. 9508.	No. 9510.
Width of lid taken parallel to hinge	18	$18\frac{1}{4}$	21	24
Width of lid taken at right angles to hinge	$15\frac{1}{3}$	15	$18\frac{1}{2}$	$18\frac{1}{2}$
Width of hinge	$13\frac{3}{4}$	17	$16\frac{1}{2}$	$19\frac{1}{2}$
Width of hole at about 20 mm. from edge ...	$10\frac{1}{2}$	12	$15\frac{1}{2}$	$16\frac{1}{4}$
Average thickness of lid ...	2	$2\frac{1}{2}$	3	3
Length of occupant	20	$19\frac{1}{2}$	26	27
Width of its carapace	$5\frac{1}{3}$	$6\frac{1}{3}$	$7\frac{3}{4}$	9

Although constructed on the same plan as those of *Stasimopus*, the nests of *Goryrella* are easily distinguishable from those of that genus.

The hole is much more slanting, and although cylindrical or nearly so in the deeper parts, it widens funnel-like towards the opening on each side and also at the hinge, but not on the side opposite to the hinge (pl. I., fig. 3). The hole is, therefore, oval in section near the opening, with the hinge-side flattened.

The lid is D-shaped in outline (pl. I., fig. 4), being strongly truncated at the hinge-margin. The hinge is very wide, exceeding in width the cylindrical part of the hole. In other respects the lid resembles that of *Stasimopus schreineri*, described above. The edge is strongly bevelled, passing over quite gradually into the lower surface, on which there is no circle of conspicuous pits. A small group of these pits are, however, sometimes present in the centre.*

The lids and loosened tubes of a number of other specimens were also sent by Mr. Schreiner, having been removed from the surrounding earth. In such cases the bevelling at the edge of the under surface is frequently quite absent, owing to the flattening out of the lid by pressure during packing. Such lids have the false appearance of being perfectly flat on the under surface.

ANCYLOTRYPA PUSILLA, n. sp.

Type.—1 ♂ (No. 9455) from Hanover (October).

♂. *Colour*.—Carapace pale yellowish, not black-bordered but

* The nests of the 3 large trap-door-building spiders at Hanover may be distinguished as follows:—

a. Lid D-shaped, the hinge very wide, wider than the cylindrical part of the hole; no circle of conspicuous pits below (hole more strongly slanting, the upper part oval in section, with one side flattened).

Gorgyrella schreineri, n. sp.

b. Lid nearly or quite circular, the hinge narrower than the cylindrical part of the hole, which is only slightly slanting.

a'. Lid moderately thick, strongly bevelled at the edge, with rounded lower edge; under side without circle of conspicuous pits.

Stasimopus schreineri, n. sp.

b'. Lid very thick, less strongly or scarcely at all bevelled at the edge, the lower edge more angular; under side with a circle of very conspicuous pits *Stasimopus unispinosus*, n. sp.

I may mention here an interesting observation in connection with old trap-door nests. In November, 1897, Mr. Isaac Meiring discovered 3 Geckos in a closed trap-door nest of a species of *Stasimopus* common round Worcester, Cape Colony. The spider was, of course, no longer in the nest. In February, 1902, Mr. Schreiner found a number of old trap-door nests at Hanover inhabited by the same species of Gecko, which has been identified by Mr. W. L. Selater as *Pachydactylus mari-quensis*,⁸ Smith. One such nest sent to us was that of *Gorgyrella schreineri*, n. sp., and in it one young and two adult Geckos had been found. Mr. Schreiner mentions that the doors of the nests inhabited by Geckos remain in working order, and are kept closed as usual.

finely sprinkled with olive-brown towards the middle, the lateral margins of the cephalic portion conspicuously olive-brown; chelicerae yellowish brown; abdomen broadly purplish black above, the sides and posterior surface of abdomen, the whole under surface of body, the legs and the pedipalps very pale yellowish.

Carapace just exceeding the metatarsus and half the tarsus of first leg in length, provided with two pairs of black setiform spines or stout setae behind and with a number of small black setae along the lateral margins and behind. *Ocular area* scarcely more than twice as wide as long, with parallel sides; the anterior row of eyes with their posterior margins in a straight line (seen from above), the median eyes rather large, larger than the eyes of the posterior row and more than half as large as the anterior laterals; the posterior row slightly recurved, the posterior lateral eyes slightly longer than the medians and about half the length of the anterior laterals, separated from the latter by almost their own length and from the former by slightly less, the posterior median eyes subquadrate, nearer to the posterior laterals than to the anterior medians.

Pedipalps not spined; process of palpal organ a little longer than the bulb, yellowish at base but black distally, the basal three-fifths stout and straight, becoming slenderer distally, the distal two-fifths very fine and slender, lightly curved.

Legs.—All the *tarsi* scopulate, I and II with 0–1 small external spines below, III with 1 anterior and 0–1 posterior spine, IV with a series of longer and shorter spines (about 2 deep) along outer lower edge and 1 spine at the inner lower edge. *Metatarsus* I very slightly curved, not scopulate, with 3 distal, 1–2 mesial, and 2 basal spines (the inner mesial and basal spine being much weaker than the others); II without inner spines below, except at the apex. *Tibia* I very slightly curved, slightly shorter than the metatarsus, not incrassated nor spurred, with 3 apical spines below, 3–4 other stout spines along the outer lower edge, 2–3 mesial and basal ones just above these on the outer surface, and a pair of proximal ones along the inner upper edge; II with 3 apical spines below, 1–2 along the upper inner edge, and 3–4 stout setiform spines along outer lower edge; IV with 3 internal spines and several long, setiform, inferior spines. *Patellae* I and II mostly with an internal spine, III with numerous spines on anterior surface and one distal one on upper surface. *Claws* of legs with a number of teeth in each row.

Posterior spinners with the apical segment distinctly longer than the penultimate one.

Abdomen with long spiniform setae above, especially at the base.

Posterior *sternal sagilla* moderate, oval, their distance apart being at least equal to the width of the labium and about twice their own length, which slightly exceeds or is subequal to their distance from the lateral margin of sternum.

Measurements.—Total length 9, length of carapace $3\frac{3}{4}$.

This is the second South African species of the genus recorded. It was found under a stone.

CYRTAUCHENIUS DENTATUS, n. sp.

Types.—4 ♀ ♀ (Nos. 9418, 9511, 9515) from Hanover (October, November), all of about the same size and apparently adult. They were dug up from trap-door nests.

♀ ♀. *Colour*.—Carapace yellowish brown, sometimes tinged with olivaceous, the cephalic portion darker brown at the sides and behind but without dark median band, the thoracic portion with a white insertion on each side posteriorly; chelicerae dark brown, sometimes olive-brown; legs pale ochraceous, the femora greenish yellow; abdomen pale yellowish, the dorsal surface with large, median, dark purplish area, which is broadest in front but does not reach hind end, the posterior end also purplish round the spinners; sternum and coxæ pale ochraceous, the coxæ of pedipalps, and often also the anterior and lateral part of sternum, brown.

Carapace as long as the patella, tibia, and $\frac{3}{5}$ – $\frac{4}{5}$ of the metatarsus of first leg, and equal to or exceeding (by about $\frac{1}{4}$ of the tarsus) the tibia and metatarsus of fourth leg. *Ocular area* nearly $2\frac{1}{2}$ times as wide as long, very distinctly or only slightly wider behind than in front, the hind margin of the anterior row forming a nearly straight to very distinctly procurved line, the anterior margins of the posterior row forming a very distinctly recurved line; posterior lateral eyes larger than the anterior medians but smaller than the anterior laterals, their distance from the latter $\frac{3}{4}$ or at least over $\frac{1}{2}$ of their own length and equal to or slightly exceeding their distance from the posterior median eyes, which are round or squarish, slightly larger or smaller than the anterior medians and equally remote (by $\frac{1}{2}$ or a whole diameter) from them and from the posterior laterals.

Legs.—*Tarsi* I and II thickly scopulate, I not spined, II with 1–2 external spines below, III with 2–7 stout spines in the posterior dorsal row. *Metatarsi* I and II scopulate to the base on each side, the scopula absent along the middle below in the proximal part, especially in II; I and II with 2–3 apical (the inner one sometimes

absent), 1 (sometimes 2) outer mesial, and 1 (sometimes 0) outer basal spines below, the latter sometimes replaced by setiform spines in II; III with an apical pair and 0-2 other spines below; IV with 0-2 spines along the upper inner edge. *Tibiæ* III and IV with 1-2 apical spines or spiniform setæ, III also with an antero-dorsal band of spines, a postero-dorsal row of 2-4 spines, 1-3 dorsal spines, and 2 distal posterior spines; IV unspined at the upper inner edge. *Claws* of anterior legs with 4-7 teeth in each row; inner claw of posterior legs with 0-2 basal and 2 mesial (axial) teeth, the outer claw with 1-2 mesial (axial) and 0-1 basal teeth. The legs otherwise as in *C. lateralis*, Purc. (Trans. S. A. Phil. Soc., v. 11, p. 357).

Coxæ of pedipalps with 1-5 rather strong, black teeth at the anterior basal margin.

Posterior *sternal sagitta* moderately large, oval, their distance apart equal to their distance from the lateral margin of sternum opposite the third leg, and slightly less than or slightly exceeding their own length.

Posterior spinners with the apical segment only a little longer than the penultimate segment (seen from below).

Measurements.—Total length 19; length of carapace $6\frac{1}{4}$, width $4\frac{3}{4}$.

Nests.—Mr. Schreiner sent me the upper portion of the web-tubing with doors attached of a couple of the nests. According to Mr. Schreiner the hole descends to a depth of about 25 cm., and is well lined with web, especially in the upper part, while the door is a flexible limp flap, being merely a continuation of the web-tubing. The upper surface of the door lies flush with the surrounding surface of the ground, and it is quite undiscoverable, unless a crack is left open. Its edge apparently slightly overlaps the edge of the tube. In one case a double entrance was observed.

In the specimens sent to me the door appeared to be about 9 mm. in diameter and subcircular in outline, the hinge occupying, however, quite half the circumference. The under side of the door, like the interior of the tube, is white and smooth, but the upper side is rough and covered with adhering particles of fine sand.

FAMILY THERAPHOSIDÆ.

HARPACTIRA BAVIANA, n. sp.

(Pl. I., fig. 9.)

Types.—2 ♂♂ from Hanover and 5 ♀♀ from Hanover and the farms Poortjesfontein and Krapfontein (Nos. 9562, 9959, 9960,

10048). Also about 90 young from Hanover ($\sigma \sigma$ in October, $\text{♀} \text{♀}$ in October, November, and January).

Closely agrees with the description given of *H. namaquensis*, Purc. (Trans. S. A. Phil. Soc., v. 11, p. 324), and apparently differing only in the following characters:—

Carapace with a considerable number of dark olivaceous or olive-black hairs between the pale golden bands, and also on the cephalic area behind and at the sides. Posterior lateral eyes elongate, generally considerably longer than the posterior median eyes.

Palpal organ, when seen from the side (pl. I., fig. 9), with the process stouter at the base and becoming very regularly thinner from the base to the apex, more quickly in the proximal part, but very gradually in the distal half, its strongest curvature appearing at the middle, while the distal part is straighter and very fine (seen from the front the distal part appears strongly curved outwards).

Measurements of large σ and ♀ from Hanover.—Total length σ 40, ♀ 51; length of carapace σ 16, ♀ 19 $\frac{1}{4}$, of metatarsus of first leg σ 12 $\frac{1}{4}$, ♀ 9 $\frac{3}{8}$.

In *namaquensis* (pl. I., fig. 8) the proximal $\frac{3}{4}$ or $\frac{1}{2}$ of the process (when seen from the side) appears stout, only very slightly curved and becoming very gradually thinner, then tapering suddenly and passing into the fine, somewhat bristle-like, distal fourth or fifth, the strongest curvature appearing at the point where the bristle-like part commences (seen from the front the process appears slightly out-curved at the apex only). The posterior median eyes, also, are generally almost or quite as large as the posterior laterals.

H. baviana is found under stones, generally in shallow excavations, but sometimes also in burrows a few inches deep. It is a very common species, although adults were rarely met with.

FAMILY ERESIDÆ.

GEN. SEOTHYRA, nov. gen.

Cephalic portion of carapace very high, strongly rounded posteriorly, rounded also at the anterior lateral corners and just as long as wide, its upper surface strongly and evenly convex from in front to behind in the ♀ (being highest in the centre) but somewhat flattened with the highest part behind in the adult σ . All the eyes small and equal, the median eyes in 2 rows and close together; the area formed by the lateral eyes scarcely, if at all, narrower behind than in front, less than twice as wide as long. Clypeus considerably

wider than the anterior median eyes. Superior spinners very small, scarcely half the length of the inferior ones. Legs shorter in the ♀ but longer in the ad. ♂; the first pair in the ad. ♂ with the tibia, patella, and femur strongly incrassated, the 3 posterior pairs slender. Chelicerae elongated and the cribellum very small in the ad. ♂.

Allied to *Dorceus* and *Adonea* from the N. African deserts. The females and immature males are sedentary and construct curious trap-door nests, but the adult ♂ runs about in the daytime and mimics an ant in its movements and general appearance while running.

SEOTHYRA SCHREINERI, n. sp.

(Pl. I., pp. 5-7.)

Specimens.—19 ♂ ♂ and 20 ♀ ♀ from Hanover (types, No. 9955, December); also 1 ♀ and 19 young from Hanover (No. 9568, November), and a few young from Poortjesfontein. The young ♂ resembles the ♀ in colour.

♀ ♀. *Colour* (in spirits) of limbs flavous, the distal ends of the pedipalps and first 2 pairs of legs orange or reddish brown; carapace yellow, the thoracic portion paler, the cephalic portion darker and often more brownish yellow; chelicerae reddish; abdomen pale yellowish or quite pallid.

Whole spider covered (but not densely) with fine black bristles and shorter, more appressed, white hairs, which are scarcely visible in spirits, but become silvery when dried.

Anterior median *eyes* about a diameter apart, very close to the posterior median eyes and $1\frac{1}{2}$ –2 diameters from the anterior margin of carapace. *Vulva* with a large, depressed, anterior area lying at the bottom of a cavity with longitudinal oval opening, the depressed area suddenly expanding posteriorly into a large, transversely oval area, the latter not depressed but defined on each side by a curved groove containing a dark spot. *Legs* IV, I, II, III.—All the tarsi and metatarsi (especially the posterior pairs) with short black spines below, metatarsus I also with an internal apical spine; tibia I with a fringe of long hairs on inner side, II with a couple of spines along under side, III and IV with 1–2 apical spines below.

♂ ♂. Carapace more or less infuscated, with black hairs; the thoracic portion brownish yellow posteriorly, with white hairs at the lateral margins; summit of cephalic portion reddish, with white hairs; chelicerae blackish red or red; coxa, trochanter, and generally also the base of the femur of first leg reddish yellow or ochraceous, rest of the leg more or less blackened, but the tarsus, metatarsus,

parts of the tibia (especially the distal part of the upper surface), and sometimes part of the patella above, paler, yellowish or reddish; the 3 posterior pairs of legs mostly yellowish but often partly infuscated, the femora black distally, the coxæ pale yellowish. Abdomen blackened, the upper surface with a very broad band of pale hairs (often creamy or whitish in spirits but yellow when dry), which covers nearly the whole upper surface or is constricted in one or two places. Pulmonary opercula often pale yellowish, with white hairs. Sternum reddish yellow. The sternum, the coxæ, trochanters, and paler basal portion of the femora of all the legs with silvery white or pale yellowish hairs, as well as black ones; so also the patellæ (only very sparingly in I), tibiæ (except basal part of I), metatarsi (except distal part of IV), and base of the tarsi. Legs I, IV, II, III.—Tibia I without interior fringe of long hairs. Pedipalps dark, the tarsus narrow at apex and produced, the palpal organ ending distally in a flattened bidentate process, one of the teeth slender and filiform, the other broader and obtuse.

Measurements.—Total length ♂ ♂ $4\frac{3}{4}$ – $6\frac{1}{2}$, ♀ ♀ 5–8 mm.

Nests.—Mr. Schreiner supplied me with a number of details concerning the structure of the nests, and also with several complete nests with the surrounding earth. The accompanying figs. 6 and 7 on pl. I., drawn to natural size, have been made from two of these nests, and the descriptions of the nests and habits given in the following are from Mr. Schreiner's notes.*

* For the purpose of travelling the loose sand in which the nests are built may be held together for a short time by first carefully moistening with water. Another and more permanent method, which I suggested to Mr. Schreiner, was employed by him with great success, and is the following: A quantity of solid paraffin is melted and carefully and gradually poured (by means of a small stick) on to the sandy soil at half an inch or so from the edge of the door. The sand rapidly soaks up the melted paraffin, and on cooling the whole mass may be removed and easily transported without damage. The ground, of course, should be perfectly dry. In order to examine such a nest it is necessary to soften the paraffin of the upper part. This is best done by wrapping the nest in cotton-wool, leaving only the upper surface exposed, and then placing the whole in warm oil of turpentine. If the nest is a large one it may be placed in water up to within a quarter of an inch from the upper surface and warm turpentine then poured upon the water. After a short time the door will be sufficiently flexible to be turned over and examined, and will remain flexible for some time after removal from the turpentine bath, but ultimately the whole will harden as before.

As showing how great a heat these spiders can endure, Mr. Schreiner sends me the following note: "When, on one occasion, I had poured the melted paraffin and it had soaked into the sand and saturated the 'butterfly' lid, after a little while the spider (finding it a bit hot, no doubt!) walked out from under the lid, leaving a little arch in it where she had travelled! No doubt this capacity to stand heat is essential to creatures living in sand which, in the hot summer days, becomes almost too hot for the hand to endure."

According to Mr. Schreiner the nests are built in ruddy, gritty sand, composed of disintegrated dolerite boulders, the particles of which are coarsest on the surface but become finer deeper down. The door consists of a large, four-lobed, flexible flap, shaped like the outspread wings of a butterfly, one pair of lobes or "wings" being slightly wider than the other (pl. I., fig. 5). The beautifully symmetrical outline is only faintly visible, and is interrupted between the larger pair of lobes, being here continuous with the webbing of the tube. The door of one of the largest nests met with by Mr. Schreiner had an expanse of 40 mm., while that of the nest of a subadult ♂ sent measured 30 mm. in expanse.

The door lies in a shallow concave excavation similar in outline, and in the nests figured about 4-5 mm. deep, becoming shallower towards the edges. The inside surface of the excavation is composed of very fine sand of a lighter colour than the surrounding surface, and much smoother. Being larger than the door, it is not completely covered by the latter, a narrow depressed band of the lighter coloured fine sand being left exposed all round (except, of course, at the hinge), and it is only the presence of this band which enables one to detect the nest at all by means of the eye.

The small entrance to the hole lies just between the bases of the larger lobes. The hole itself descends straight or with a curve to a depth generally less than but never exceeding 2 inches. It is provided on the convex (hinge) side with a small side chamber at some distance from the entrance. According to Mr. Schreiner the hole is generally straight or nearly so, and not so curved as in fig. 7, while the side chamber is generally deeper down. The upper part of the hole is webbed for some distance from the entrance, and is invariably inclined as in fig. 7. At the entrance, which is strongly transversely oval, the upper part of the web-tubing passes over into the door, thus forming a hinge occupying half the circumference of the opening. At the lower half of the opening the web-tubing is produced into a characteristic, rounded, stout, tongue-shaped flap, which lies nearly horizontally on the bottom of the excavation below the centre of the door.

The structure of the door is peculiar. The door consists merely of a number of particles of fine sand, loosely held together by strands of fine silk. The under side is, however, smooth and well lined with white silk, but the upper surface is strewn with grit and exactly resembles the surrounding ground. The whole forms an extremely flexible mat, which Mr. Schreiner compares with the fresh skin of a kid. Except for the peripheral band it completely fills the ex-

cavation, so that its upper surface is flush with the surrounding ground.

The door is never lifted, for the small spider merely crawls out anywhere from under the edge, as from under a blanket (several were observed doing so), the raised portion of the limp door closing down again immediately from its own weight. The tongue-like flap at the opening of the hole no doubt facilitates entering the latter, besides preventing sand from falling in.

Habits.—The female spiders and young of both sexes feign death when disturbed. The nests of the immature spiders were found fairly abundant during November, while the adult form of both sexes appeared early in December (only one adult ♀ was found in November). The adult males run about the veld by day, but one specimen was dug up from a nest, apparently just after moulting. The males have a curious habit of raising their front legs and showing fight. When running, the males, according to Mr. Schreiner, show a close resemblance in colouration and movements to the smaller specimens of a large ant (*Camponotus fulvopilosus*, de Geer), which has similar yellowish hairs on the abdomen above and is common in the locality. Unlike the female, but like the ant, the male runs with its body high off the ground.

During January and February the spiders and nests disappeared, and it was not until March 10th that the tiny nests of some young ones were observed, only to disappear at the approach of bad weather. During some weeks of fine weather in the beginning of May large numbers of these tiny nests were again observed.

FAMILY LYCOSIDÆ.

LYCOSA SCHREINERI, n. sp.

Types.—5 ♀ ♀, 3 ♂ ♂, and 3 young from Hanover and from the neighbouring farms Vlagkop and Palmietfontein.

♀ ♀. Brown bands on *carapace* covered with black or blackish brown hairs and provided with radiating stripes of white hairs; the submarginal bands yellow, covered like the black margins with white hairs; the median band yellow, with whitish or yellowish hairs, its cephalic portion parallel-sided, often with 2 dark spots and generally marked off from the narrower thoracic portion by a slight angular constriction, the thoracic portion narrowed behind the median stria. Posterior median *eyes* large, scarcely or slightly

less than their own diameter apart; anterior row of eyes considerably narrower than the second row, procurved, the medians slightly larger. *Chelicerae* covered with fiery red and yellow hairs in front and with 3 strong teeth in lower margin, the 2 distal ones subequal. Upper surface of *abdomen* divided into 3 blackish grey and blackish brown areas by 2 longitudinal yellow lines, which extend with interruptions to hind end of body but converge and unite anteriorly, the posterior part of the upper surface with a series of transverse, angularly undulate bars, bordered posteriorly by white hairs and extending across the median dark band and generally also across the 2 yellow stripes; the anterior half of the median band strongly constricted just behind its middle, the portion before the constriction cuneate, strongly narrowed in front; the lateral bands black at anterior ends. Under side of abdomen black. Median bar of *vulva* narrowed behind, about $1\frac{1}{4}$ – $1\frac{1}{2}$ times as long as the transverse bar, the cavity on each side long, slightly wider than the median bar, and about $2\frac{1}{2}$ –3 times as long as wide. *Legs* reddish yellow to reddish, the femora infuscated in parts; tibia IV with broad black band at apex and base below, I–III not banded, or III also blackened at apex and base. Tarsi, metatarsi, and tibiae of first 2 pairs of legs scopulate below; tarsi III and IV with narrow scopula on each side; metatarsi III and IV thinly scopulate below and more thickly so at the sides. Basal spines in metatarsus I not or scarcely reaching the mesial spines.

♂♂. Colour much as in the ♀; tibia of first 2 pairs of legs equally clothed all round with pale appressed hairs, but without differentiated scopula below; metatarsi III and IV with scopula in the distal half only.

Measurements.—♂♂ $12\frac{1}{2}$ – $15\frac{1}{2}$, ♀♀ $15\frac{1}{2}$ – $21\frac{1}{2}$ mm. in length.

A rather rare species, somewhat larger than *L. darlingi*, Poc., which occurs abundantly in the same locality and very closely resembles *schreineri* in colour and structure. In the specimens of *darlingi* from the same locality the dark median band is relatively broader and more sharply and evenly defined on each side, and the anterior half of the band is only slightly or not at all constricted behind its middle, the whole anterior half, therefore, forming a larger cuneate mark. One, at least, of the specimens of *schreineri* was taken from a nest provided with a movable lid, like that of *L. domicola*, Sim., which occurs abundantly in the same neighbourhood.

LYCOSA RIMICOLA, n. sp.

Specimens.—9 ♂♂ and 9 ♀♀ (types, No. 9423) from Hanover (September, October). Also many other specimens from the farms Vlagkop, Palmietfontein, and Poortjesfontein.

♀♀. *Carapace* dark brown, with some fine, black, radiating lines and covered with grey hairs; the narrow, paler, submarginal band frequently obliterated; the paler median band often indistinct and then indicated only posteriorly, but when distinct the cephalic portion is broad with 2 parallel dark lines or oblong spots, while the thoracic portion is narrowed behind and frequently with lacinate margins. Posterior median *eyes* slightly less than their own diameter apart; the anterior row of eyes scarcely or not at all narrower than the row formed by the posterior median eyes, their lower margins in a straight or slightly procurved line, the median eyes a little larger than the laterals. Upper side of *abdomen* with light or dark greyish ground colour, a row of black spots on each side, an anterior longitudinal brown band finely bordered with black, and a pair of equally broad yellowish bands (obliterated in dark specimens) enclosing the brown band between them and converging and then uniting anteriorly; posterior to these are generally also a series of transverse angular bands of yellow. *Legs* reddish yellow, the femora with some faintly infuscate marks above but not distinctly banded, the anterior pairs frequently darker distally. *Chelicere* with some yellowish hairs in front, the lower margin with 3 teeth, of which the distal one is much the smallest. *Coxæ* more or less infuscated. *Sternum* generally black. *Under side of abdomen* black. Tarsi and metatarsi, and to a lesser extent the tibiae of the first 2 pairs of *legs*, scopulate; tarsi III and IV with a thick scopula on each side; metatarsi III and IV more thinly scopulate; spines on legs I and II small, those on the metatarsi especially remarkably short. Median bar of *vulva* long and linear, bordered on each side by a long, still narrower, parallel-sided cavity, the transverse posterior bar short.

♂♂. Very like the ♀♀, but the spines on the anterior legs much longer.

Measurements.—♂♂ 11–13 mm., ♀♀ 15–19 mm. in length.

A strongly built and rather common species, somewhat resembling *L. promontorii*, Poc., in appearance, but larger; the latter species also occurs in this locality. *L. rimicola* is found in various hiding-places, such as cracks in the ground, &c.

LYCOSA LATIVITTATA, n. sp.

Types.—3 ♀ ♀ and 6 ♂ ♂ (No. 9427) from Hanover.

♀ ♀. *Carapace* with 2 well-marked, broad, dark brown or blackish bands and narrow, blackish, lateral border, the submarginal yellow stripes very distinct and not obscured by the hair-covering; the median yellow band also well marked, its cephalic portion with a pair of small dark dots and marked off from the narrower thoracic portion by a slight angular constriction, the thoracic portion rather broad, constricted just behind the median stria, then widened again posteriorly. Posterior median *eyes* smallish, at least their own diameter apart; the anterior row of eyes slightly procurved, at least as wide or, if anything, slightly wider than the second row, the eyes subequal. *Abdomen* above and at the sides blackish grey to nearly black, with some scattered black dots; the upper surface with a sharply defined, very broad, median, yellow band, which is widest in front and extends right up to hind end, becoming only slightly narrower posteriorly; the band bordered on each side by a row of black spots, with a larger black mark on each side at anterior end; under surface, and generally also the lower part of the sides, pale yellowish, the under surface with a median dark stripe, which is dilated on the epigastric area and pointed at the posterior end, also with a pair of dark lateral stripes or rows of spots. *Vulva* much broader than long, divided by 2 angular grooves into a median bar and 2 lateral pieces, the median bar incurved and dilated behind. *Legs* pale yellowish or ochraceous, provided (also on under side) with rather numerous, long, erect, fine, black bristles; the femora mottled with infusate marks but not distinctly banded; legs I and II scopulate on the tarsi and metatarsi but not on the tibiae, III and IV scopulate on the sides of the tarsi only; basal spines of metatarsus I not quite reaching the mesial spines. *Chelicerae* with some pallid hairs in front, the 3 inferior teeth subequal. *Sternum* black, with or without median yellow line. *Coxae* pale yellowish or ochraceous, sometimes with infusate markings below.

♂ ♂. As in ♀, except that in legs I and II the metatarsi are not scopulate and have longer spines below, the long, fine, erect black bristles especially numerous on under side of second leg.

Measurements.—♂ ♂ $5\frac{3}{4}$ – $6\frac{3}{4}$ mm., ♀ ♀ $8\frac{3}{4}$ – $9\frac{3}{4}$ mm. in length.

A small species, found under stones, &c.

LYCOSA ARBUSCULA, n. sp.

Types.—11 ♂ ♂ and 22 ♀ ♀ from Hanover (No. 9429; September, October).

♀ ♀ ♂ ♂. *Carapace* coloured and marked exactly as in *lativittata*, n. sp. Posterior median *eyes* smallish, their distance apart at least equalling or even slightly exceeding their own diameter; the anterior row slightly procurved, as wide as or slightly wider than the second row, the median eyes slightly larger than the laterals. *Abdomen* above and at the sides blackish grey to nearly black, with some scattered black dots; upper surface with a narrow, median, yellow stripe, which is transversely dilated at its anterior end like a T and provided in the posterior $\frac{3}{4}$ of its length with paired lateral branches directed obliquely outwards and backwards; the stripe and its lateral branches bordered with deep black; a black spot also on each side of the anterior dilation. Under surface, and frequently also the lower part of the sides, pale yellowish, marked as in *lativittata*. *Vulva*, *legs*, *chelicerae*, and *sternum* as in *lativittata*, the coxæ often with infuscate markings. Legs with the basal spines on metatarsus I not or only just reaching the mesial spines.

Measurements.—♂ ♂ 5-6 $\frac{1}{4}$ mm., ♀ ♀ 6-9 mm. in length.

This species so closely resembles *lativittata* that practically the only difference between the two is the substitution of a broad, straight-edged yellow band in the latter in the place of the tree-shaped band on the abdomen of the former.

LYCOSA BRUNEIPES, n. sp.

Types.—19 ♀ ♀ and 7 ♂ ♂ (No. 9428; September, October) from Hanover.

♀ ♀. General colour above and below pale yellow to ochraceous. *Carapace* only slightly infuscated on the 2 darker bands, but provided here with black hairs; the cephalic portion of the median yellow band strongly constricted at its hind end, provided with a pair of ()-shaped lines, which are generally fused anteriorly (sometimes almost entirely) with the dark lateral bands but sometimes reduced to a pair of posterior spots or even almost absent; the thoracic portion of the yellow median band constricted near hind end of median stria and thence parallel-sided or even widened again posteriorly; infuscate lateral border generally absent or indistinct, the margin then broadly yellow. Posterior median *eyes* smallish, very slightly less than their own diameter apart; the anterior row at least as wide as or, if anything, slightly wider than the second row, the lower margins in a slightly recurved or nearly straight line, the median eyes largest. *Abdomen* with a broad, pale yellow, uninterrupted median line above, which is narrower posteriorly and ex-

tends to hind end and has its lateral margins more or less sinuate, its anterior part more or less amplified like a broad, blunt arrow-head, the median part above the heart more intensely yellow and sometimes bordered with black (in the latter case the barbs of the arrow-head may become cut off from the shaft or be even almost obliterated); lateral part of upper surface with a broad, irregular, infuscate band, which is furnished posteriorly with a longitudinal row of yellow spots or medial bar-like incisions, and which breaks up laterally into a number of black spots on the sides of the abdomen; under surface with the median and the 2 lateral rows of spots generally distinct; the epigastric area without black marks. *Vulva* a brown hairy plate about as long as wide, with a round, reddish black spot near each posterior corner, the posterior margin with a pair of emarginations and a short rounded lobe between them. All the *legs* strongly browned in the distal half, the 2 distal segments long and slender; first and second pairs scopulate on the tarsi and metatarsi but not on the tibiæ; third and fourth pairs with a narrow scopula on the sides of the tarsi but none on the metatarsi; basal spines of metatarsus I long, reaching up to or beyond the bases of the mesial spines. *Sternum* generally with a row of 3 lightly infuscate spots on each side. *Chelicerae* with some whitish hairs and fine black bristles in front; the distal tooth of inferior margin smaller than the other two.

♂♂ resembling the ♀, except that the scopula is reduced to a scanty distal strip on each side in metatarsus I and is practically absent in II, the black bristles on under side of second leg not longer than those on the other legs. Tibia of pedipalp as long as the tarsus.

Measurements.—♂♂ $5\frac{1}{2}$ –7 mm., ♀♀ 6– $10\frac{1}{4}$ mm. in length.

A small species, somewhat resembling *lativittata*, n. sp., in appearance, but with the dorsal yellow band on the abdomen less parallel-sided and the lateral part of the upper side of abdomen and carapace not so deeply blackened. It is found under stones, &c., and is fairly abundant.